

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC. 20554**

<b>In the Matter of</b>	)	
	)	
<b>Amendment of the Amateur</b>	)	<b>RM-10870</b>
<b>Radio Service Rules to Provide</b>	)	
<b>for a New Entry Level Amateur</b>	)	
<b>Radio Class</b>	)	

**To: The Commission**

**COMMENTS of Nickolaus E. Leggett  
N3NL Amateur Radio Operator**

The following is a set of comments from Nickolaus E. Leggett, an amateur radio operator (Extra Class licensee – call sign N3NL), inventor (U.S. Patents # 3,280,929 and 3,280,930 and one electronics invention patent application pending), and a certified electronics technician (ISCET and NARTE). I also have a Master of Arts degree in Political Science from the Johns Hopkins University (May 1970).

My comments are on the petition for a new entry-level class of amateur radio operator submitted by the National Conference of Volunteer Examiner Coordinators. This proposed new class of operator is the Communicator Class.

**Communicator Class Operators Barred from Building Their Transmitters**

In the petition, the Communicator Class amateurs are prevented from building their own amateur radio transmitters:

“No transmitter or transceiver may be used unless it is of commercial manufacture or built from a kit of commercial origin.” (page 7 and page 19 of the petition)

## **The Value of Home-Built Transmitters to New Amateur Radio Operators**

Throughout the history of amateur radio, amateur radio operators have built their own Morse Code and voice mode transmitters. This activity has been a major tool for learning electronics technology and a source for inspiration of achievement in technology.

### **Home-Built Transmitters for the Beginner**

In the past, many Novice Class operators built their own basic radio telegraph transmitters. These transmitters were simple three-stage devices consisting of an oscillator, buffer stage, and a final amplifier. Each of these stages contained at least a single active component (vacuum tube or transistor) and several passive components. The oscillator (or in some designs another stage) was keyed with a Morse code key to transmit messages.

This simple Morse code transmitter could be converted into an Amplitude Modulation (AM) voice transmitter by adding a modulator. A modulator is an audio amplifier that applies a modulating signal usually to the final amplifier. Communicator Class amateur radio operators could construct such basic AM transmitters for voice operation on the high frequency (short-wave) amateur radio allocations. Even a low power AM transmitter operating at 30 Watts output will accomplish many worthwhile contacts and will have a fine quality audio signal. I know because I have used this type of AM transmitter. The transmitter can use crystal control or a simple variable crystal oscillator (VXO) for signal stability.

## **Operating Protocol for Communicator Class Home-Built Transmitters**

The Communicator Class hams can agree to a protocol where they operate low-power home-built AM transmitters on or near certain specific frequencies. This would allow them to find each other for contacts and would keep the AM carrier signals from interfering with single side band (SSB) voice transmissions of other amateur radio operators.

## **The Value of Hands-On Electronics Experience**

Many of us learn best by actual hands-on experience. Just reading a book is not sufficient to develop a mental model of what is going on in specific components such as transformers or transistors. In addition, the function of a circuit (a set of interconnected components) is often not clear until we build the circuit ourselves and work with it. Throughout the history of ham radio, this learning tool of do-it-yourself has been available to all hams including the beginners. It would be a serious loss to prevent the beginner from building his own ham radio station.

In addition, such a prohibition would communicate to the newcomers that ham radio is not a technical activity. Instead it indicates that hams are just users of equipment and not the builders of equipment. This is not the message that the Commission wants to send to amateur radio.

## **Suggested Action**

The Commission should establish rules for Communicator Class amateur radio operators that do not prevent them from building their own amateur radio transmitters.

**Respectfully submitted,**

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